SONY

3-856-969-11 (1)

3007043
SONY BDA

Videocassette Recorder

Operating Instructions **Page 2**
Before operating the unit, please read this manual thoroughly and retain it for future reference.

Mode d'emploi **Page 36**
Avant la mise en service de cet appareil, priére de lire attentivement ce mode d'emploi que l'on conservera pour toute référence ultérieure.

Bedienungsanleitung **Seite 70**
Vor der Inbetriebnahme lesen Sie diese Anleitung sorgfältig durch und bewahren Sie sie zum späteren Nachschlagen auf.

Manual de instrucciones **Página 104**
Antes de utilizar la unidad, lea este manual detenidamente y consérvelo para futuras referencias.

Istruzioni per l'uso **Pagina 138**
Prima di usare l'apparecchio, leggere con attenzione questo manuale e conservarlo per riferimenti futun.

SVT-1000P

SVT 5050P

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WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

What is Time Lapse Video?

- A normal VCR records 50 fields per second, while this time lapse VCR records in a range from 2 to 10 fields per second. Through reduction of the number of fields recorded per second, this VCR is capable of recording for extended periods of time on a standard video tape (up to a maximum of 72 hours).
- As a result, this VCR is extremely useful for long-term monitoring or recording events that take place slowly (such as the blooming of a flower).
- If a tape that has been recorded in time lapse mode is played back in the normal three-hour mode, the speed of the tape will be increased 5 to 25 times, depending on the speed the original recording was made at, so that the slow changes that were recorded can be viewed at a much faster speed.

CAUTION

The format used for time lapse recording in this video cassette recorder differs from the regular VHS video format. Cassettes recorded in three-hour mode on this unit can be viewed on a normal VHS video cassette rcorder. However, cassettes recorded in other modes may show some picture noise when played on a normal VHS video cassette recorder.

English

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Precautions

On safety

- Operate the unit on 220 V – 240 V AC, 50 Hz only.
- The nameplate indicating operating voltage, power consumption, etc., is located on the rear of the unit.
- Should any solid object or liquid fall into the cabinet, turn off the power, unplug the unit and have it checked by qualified personnel before operating it any further.
- Do not drop or place heavy objects on the power cord. If the power cord is damaged, turn off the power immediately. It is dangerous to use the unit with a damaged power cord.
- Connect the power cord to the wall AC outlet.
  For connecting the power source, see "Connecting a Camera, Monitor and Microphone" on page 8.
- Unplug the unit from the wall outlet if it is not to be used for several days or more.
- Disconnect the power cord from the wall AC outlet by grasping the plug, not by pulling the cord.

On installation

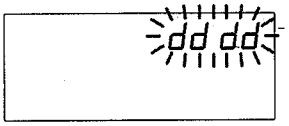
- Do not place a heavy object on the unit.
- Allow adequate air circulation to prevent internal heat build-up.
  Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation slots.
- Do not install the unit in a location near heat sources such as radiators or air ducts.
- Place the unit to avoid direct sunlight.
- Do not install the unit in a place subject to mechanical vibration or shock.
- Do not put magnetic objects close to the unit and cassette tape. Magnetic fields may affect the color reproduction of the unit and cause distortion.
- Whenever you changed the place of the installation, degauss the unit.
- The unit is designed for operation in a horizontal position.
  Do not install it in an inclined position.

On operation

When the unit is not in use, turn the power off to conserve energy and to extend its life.

On moisture condensation

If the unit is brought directly from a cold to a warm location, moisture may condense on the video head drum. In this condition, the tape may adhere to the head drum and cause serious damage to the head. To avoid damage caused by moisture condensation, be sure not to leave a cassette inside the compartment when the unit will not be used. If moisture condensation is present, the "dddd" indicator flashes in the display window and the unit will not operate. When the "dddd" indicator disappears, you can operate the unit.



On video cassettes

Remove and store video cassettes after recording or playback.

On cleaning

As a safety precaution, unplug the unit before cleaning it.

- To keep the unit looking brand-new, periodically clean it with a mild detergent solution. Never use strong solvents such as thinner or benzine, or abrasive cleaners since they will damage the cabinet.
  When cleaning, keep liquid away from electrical contacts and connectors.
- When there is a buildup of dust on air vents, use a vacuum cleaner to remove it.

On repacking

- Before repacking, disconnect all cables and connecting cords.
- Do not throw away the carton and packing materials. They make an ideal container with which to transport the unit. When shipping the unit to another location, repack it as illustrated on the carton.

On transportation

When transporting the unit, protect it from vibration and impact.

If you have any questions about this unit, contact your authorized Sony dealer.

Features

Field recording/field playback
Because single fields can be recorded one by one in time lapse mode and all fields can be viewed separately during playback, you can record more information.

Audio recording in 12-/24-mode
You can record audio information with video information even in 12- or 24-hour mode and listen to it by selecting audio mode during playback.

Various recording functions
- **Repeat recording:** When the tape reaches the end, the VCR rewinds the tape and starts recording again from the beginning of the tape.
- **Timer recording:** You can set the timer on daily recording or weekly recording.
- **Alarm recording:** If an externally connected alarm sensor is triggered, you can make a complete recording of the situation that triggered the alarm.

Multiple recording modes
The time lapse intervals for recording can be set in 4 steps. At the longest interval setting, available recording time is a full 72 hours (3 days) with one 180-minute tape.

Used time indicator
This VCR has a built-in microprocessor equipped with a calendar function and shows used time of head drum and power on time on the monitor screen.

Alarm scan function
You can scan the alarm recording and play it back for five seconds.

Forward/reverse field advance
This VCR offers improved search functions with the ability to move both forwards and backwards between fields.

Clock operation backup
When a power interruption occurs, the built-in rechargeable battery will provide backup power for the clock for up to 30 days.
Essential data, such as data setting, internal timer settings, recording time, and mode settings, and alarm recording mode settings are also retained.

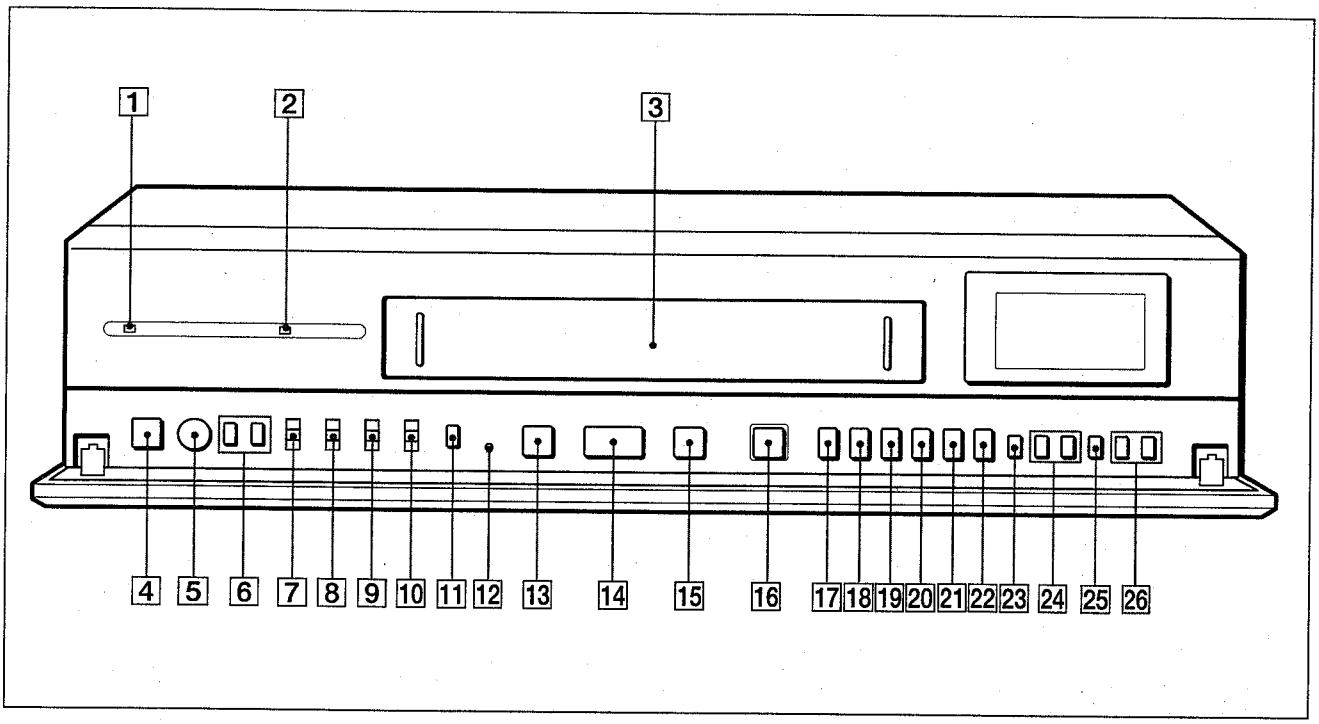
Security lock
To guard against operation errors, this VCR locks all of the buttons.

Monitoring the recording condition
You can check the recorded image during recording by pressing a single button.

RS-232C interface
By installing an optional SVT-RS1 Computer Interface Board, you can control this VCR from a personal computer via RS-232C interface.

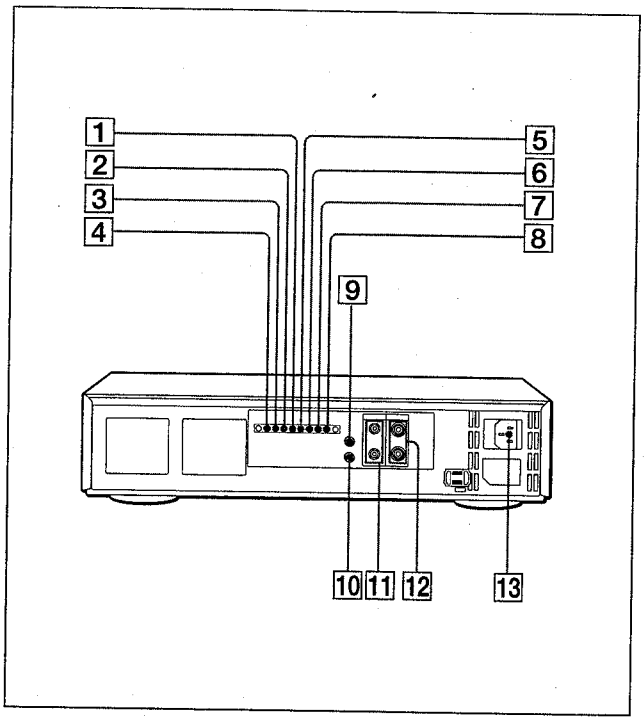
Location of Parts and Controls

Front Panel (Refer to pages in parentheses for details.)



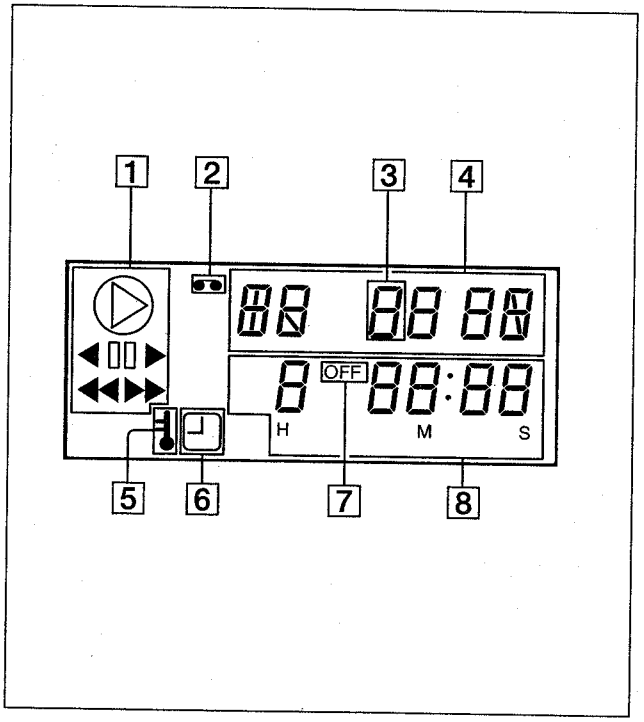
1 ON indicator
2 REPEAT indicator (16)
3 Cassette compartment
4 ON/STANDBY switch
5 SHARPNESS control (28)
6 TRACKING +/– buttons (29, 30)
7 ALARM SPEED switch (25)
8 ALARM DURATION switch (25)
9 REPEAT REC switch (16)
10 ON-SCREEN switch (12)
11 TIMER button (20, 22, 24)
12 MENU RESET button (16, 22, 24, 26, 27)
13 ⏏ EJECT button (14)
14 ● REC button
15 REC CHECK button (17)
16 ■ STOP button
17 ◀◀ REW button
18 ▶ PLAY button
19 ▶▶ FF button
20 ❚❚ PAUSE button
21 ◀ REV button
22 SEARCH/AUDIO ON button (10, 28)
23 MENU button (10)
24 SHIFT ▼/▶ buttons (10)
25 COUNTER RESET button (28)
26 REC/PLAY SPEED +/– buttons (10)

Rear Panel (Refer to pages in parentheses for details.)



1 END OUT terminal (33)
2 WARNING OUT terminal (32)
3 COM (common) terminal (32)
4 EXT TIMER terminal (23)
5 SW OUT terminal (32)
6 COM (common) terminal (32)
7 ALARM OUT terminal (25)
8 ALARM IN terminal (25)
9 MIC IN jack (8)
10 REMOTE jack (33)
11 AUDIO IN/OUT jacks (phono type)
12 VIDEO IN/OUT jacks (BNC type) (8)
13 AC IN (inlet) (8)

Display Window



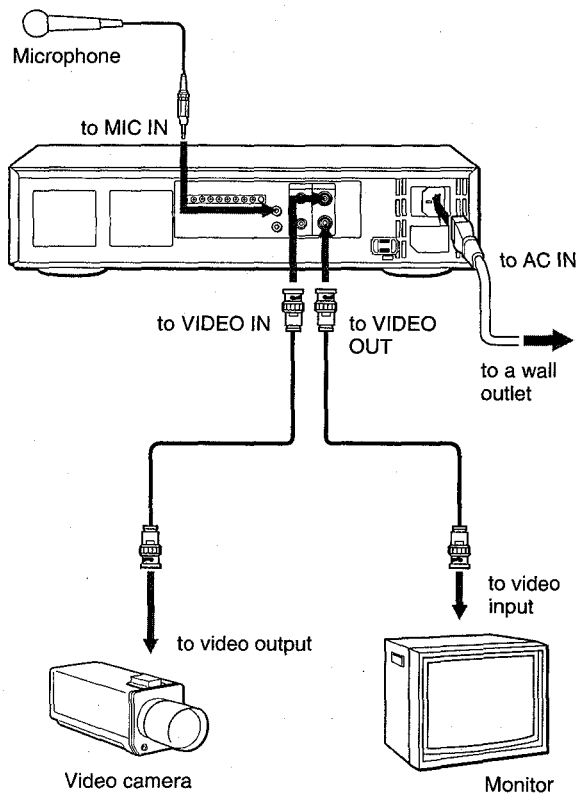
1 Tape operation indicators
2 Cassette indicator
3 Power interruption indicator
4 Tape speed/Alarm/Moisture condensation
5 Security lock indicator
6 Timer recording standby indicator
7 OFF indicator
8 Linear time counter/Timer recording indicator

Connections

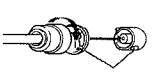
Turn all the power off before making connections.
Connect the AC power cord last.

Connecting a Camera, Monitor and Microphone

With the following connections, you can monitor the picture and sound.



Use of BNC connector

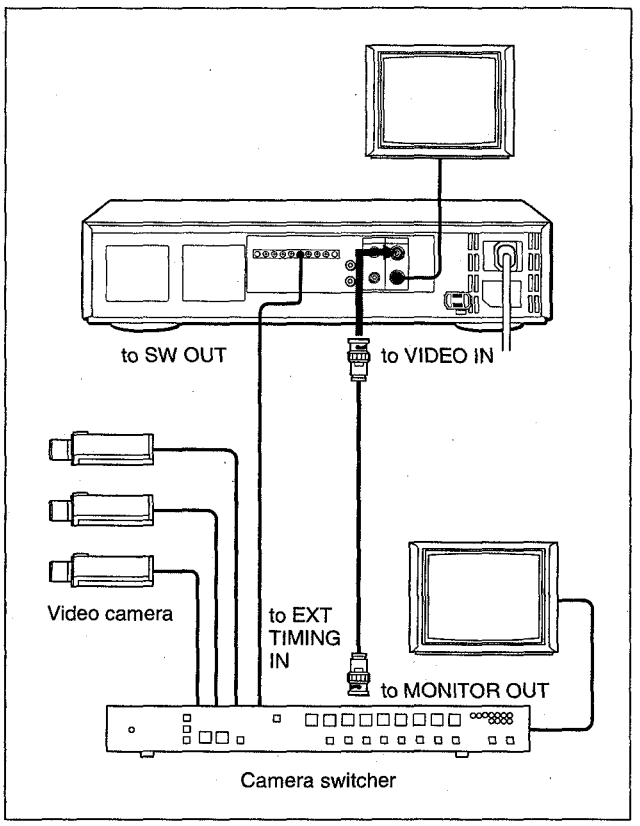


Align pin with cutout, insert and turn right to lock.
To remove, turn left and pull out.

To connect an alarm sensor

Refer to page 25.

Connecting a Switcher

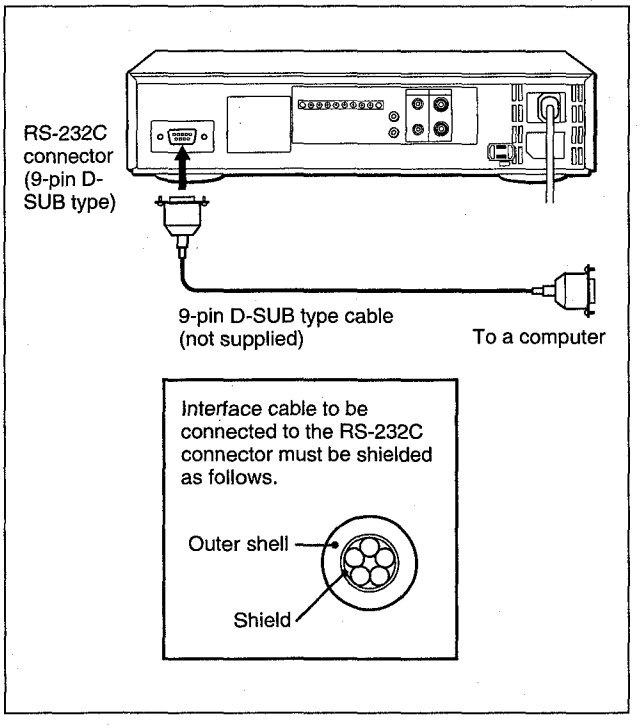


Note

When you connect several cameras to a switcher, synchronize the cameras.
If not, the picture will be disturbed.

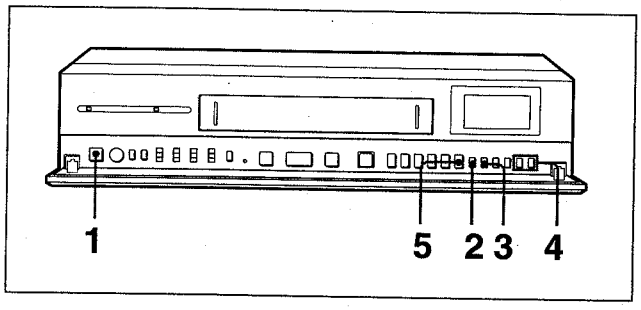
Connecting a Computer

To connect to a computer, use the SVT-RS1 Computer Interface Board (not supplied).
For details about installation and control from a computer, see the instruction manual of the SVT-RS1.


RS-232C connector (9-pin D-SUB type)
9-pin D-SUB type cable (not supplied)
To a computer
Interface cable to be connected to the RS-232C connector must be shielded as follows.
Outer shell
Shield

Setting the Language

Select either English, French or German for the display language.



1 Turn on the power.

2 Press MENU until the LANGUAGE display appears on the monitor screen.

3 Press SHIFT ▼ so that ENGLISH flashes.

4 Press REC/PLAY SPEED +/– to select the language.

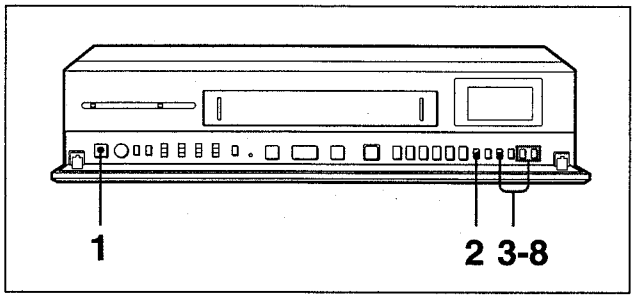
5 Press SEARCH to return to the normal display.

Note

When you want to change the language again, repeat steps 2 to 5 after step 5.

Setting the Clock

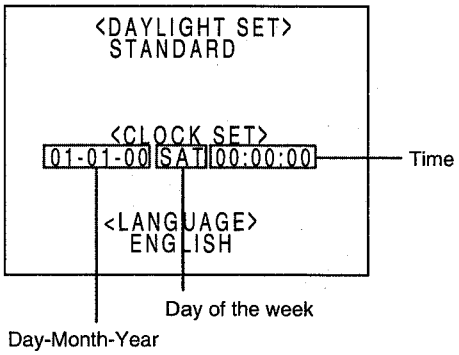
Set the clock to the current time and date on the monitor screen. For Daylight Saving Time, proceed the steps in "Adjusting to Daylight Saving Time" on page 12 first.



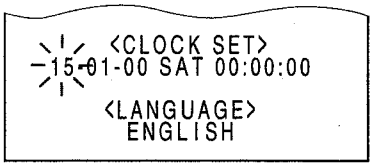
Example:
Set the date and time to 15:20 on 15 October, 1996.

1 Turn on the power of the equipment to be used.

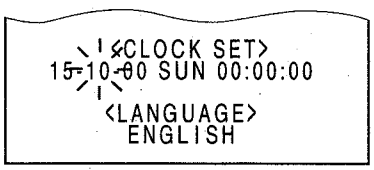
2 Press MENU until the CLOCK SET display appears on the monitor screen.
The first display shows 1 January, 2000.



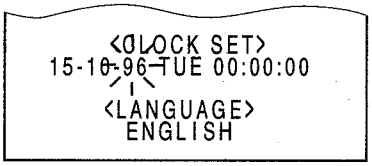
3 Set the day by pressing REC/PLAY SPEED +/–, then press SHIFT ▶.



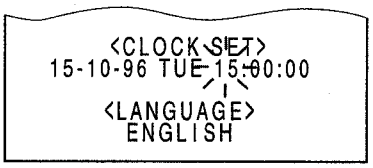
4 Set the month by pressing REC/PLAY SPEED +/–, then press SHIFT ▶.



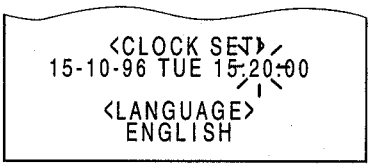
5 Set the year by pressing REC/PLAY SPEED +/–, then press SHIFT ▶.



6 Set the hour by pressing REC/PLAY SPEED +/–, then press SHIFT ▶.



7 Set the minutes by pressing REC/PLAY SPEED +/–, then press SHIFT ▶.



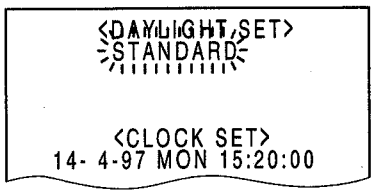
8 Press REC/PLAY SPEED – simultaneously with a time signal.
You can set the clock at the 00 second point.

9 After setting the date and time, press SEARCH to return to the normal display.

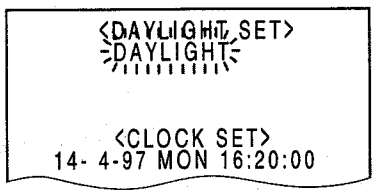
Adjusting to Daylight Saving Time

After setting the time in Standard Time, you can adjust to Daylight Saving Time when the season changes.

1 Press MENU until the DAYLIGHT display appears on the monitor screen.



2 Press REC/PLAY SPEED +/– to select DAYLIGHT.
The clock moves forward one hour.



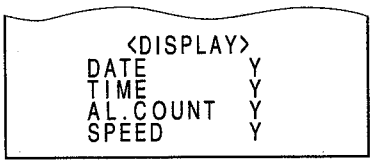
3 Press SEARCH to return to the normal display.

Setting the Time/Date Display

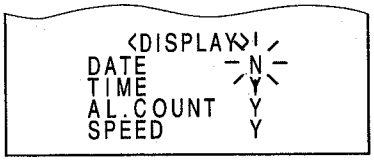
You can display four items of information, date, time, number of alarm recordings and recording/playback speed and turn off each item which you do not want to display.

1 Turn on the power of the equipment to be used.

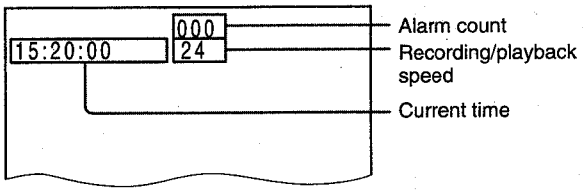
2 Press MENU until the DISPLAY display appears on the monitor screen.



3 Press SHIFT ▼ so that the item to be set flashes and REC/PLAY SPEED +/– to set to Y(yes) or N(no).
Example: When you set the date display to N.



4 Press SEARCH to return to the normal display (time/date screen).



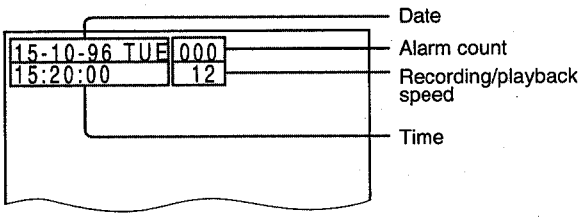
To turn off the screen display

Set the ON-SCREEN switch to OFF.

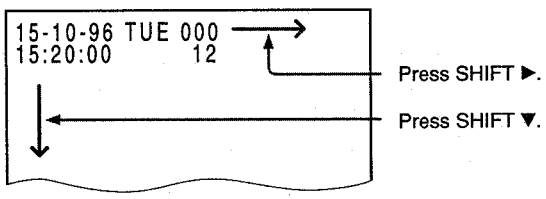
Changing the Display Position of the Time/Date Display

You can change the position of the time/date display that appears on the monitor screen.

1 Turn on the power of the equipment to be used.
The normal display appears.



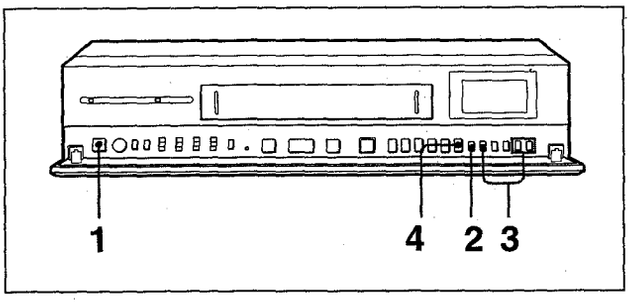
2 Change the display position as follows.
To move the display downwards, press SHIFT ▼. (When the display reaches the bottom of the screen, the display returns to the top of the screen.)
To move the display rightwards, press SHIFT ▶. (When the display reaches the right-hand edge of the screen, the display returns to the left-hand edge of the screen.)



Setting the Buzzers

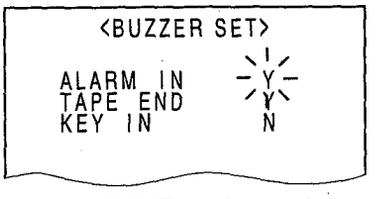
You can turn on/off three types of buzzers:

- **ALARM IN buzzer**: beeps while it receives an alarm signal. (See "Alarm Recording" for more information on page 25.)
- **TAPE END buzzer**: beeps when the tape reaches its end.
- **KEY IN buzzer**: beeps when you press a button.

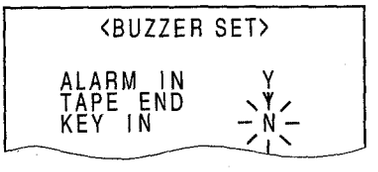


1 Turn on the power of the equipment to be used.

2 Press MENU until the BUZZER SET display appears on the monitor screen.



3 Press SHIFT ▼ so that the item to be set flashes and REC/PLAY SPEED +/– to set to Y (yes) or N (no).

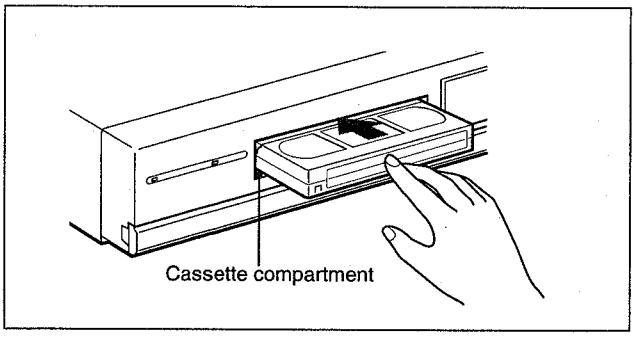


4 Press SEARCH to return to the normal display.

Handling a Video Cassette

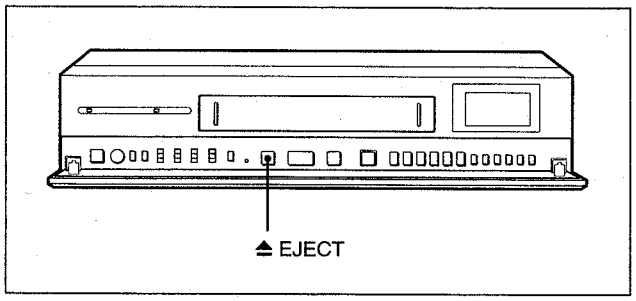
This section shows you how to insert a video cassette into the VCR.

Inserting a Video Cassette



Insert the cassette into the cassette compartment by slowly pressing its center with the arrow on the top. When the cassette is inserted, the VCR automatically turns on and the ●● indicator lights in the display window.
If you insert the cassette without its safety tab for recording, the VCR ejects the cassette automatically.

Ejecting the Video Cassette



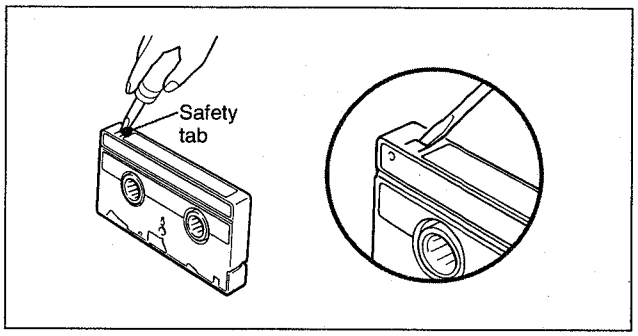
Press ⏏ EJECT on the VCR.
You can eject the cassette even when the power is off. When you press ⏏ EJECT, the VCR turns on automatically.
After ejecting the cassette, the VCR turns off again.

Recommended cassette

This VCR is designed and calibrated with 180-minute tape (Sony E-180). To ensure stable operation and optimum picture quality, we recommend that you use a Sony 180-minute tape.

Protecting Your Cassette from Being Erased

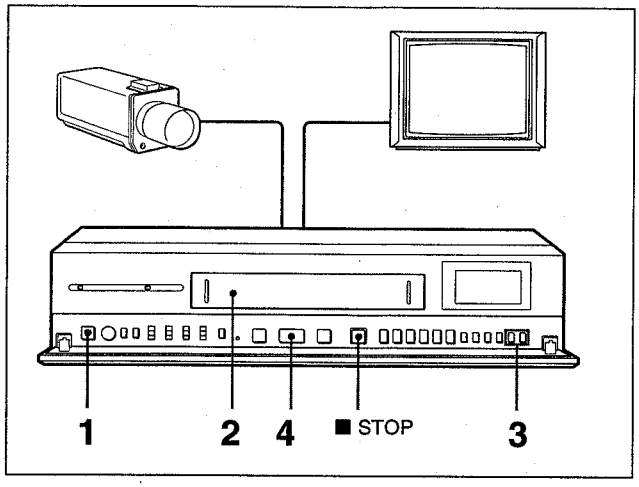
Remove the tab on the cassette with a screwdriver or a similar tool as shown below. This protects your cassette against an accidental recording.



If you want to record again on the cassette without its safety tab, simply cover the safety tab hole with a piece of plastic tape.

Recording

This section shows you how to record the signal from the video camera in the normal or time lapse mode, to set the security lock and to record repeatedly on the same cassette.



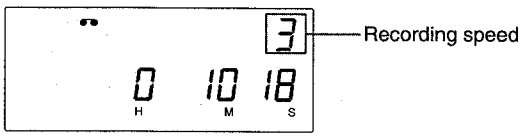
1 Turn on the power of the equipment to be used.

2 Insert the cassette.

3 Set the recording speed by pressing REC/PLAY SPEED +/–.

Recording speed	Maximum recording time with 180-minute tape (hour)		Interval (sec.)	Audio recording	Tape motion
3	Standard mode	3	1/50	Possible	Continuous
12	Time lapse mode[a)]	15	0.1		
24		27	0.18		
48		51	0.34	No	Intermittent
72		75	0.5		

a) In time lapse modes, it is possible to record additionally three hours longer than the displayed recording time.



In the display window

4 Press ● REC.
Recording starts.

To stop recording

Press ■ STOP.

If recording does not start and the cassette is ejected

The tab on the cassette is removed to protect against accidental recording.

When the tape reaches the end

When REPEAT REC is set to OFF (see page 16), the tape is rewound to the beginning of the tape and stops. The OFF indicator lights in the display window. Press ● REC, ▶▶ FF, ◀◀ REW or ▶ PLAY to turn off the OFF indicator.

Note

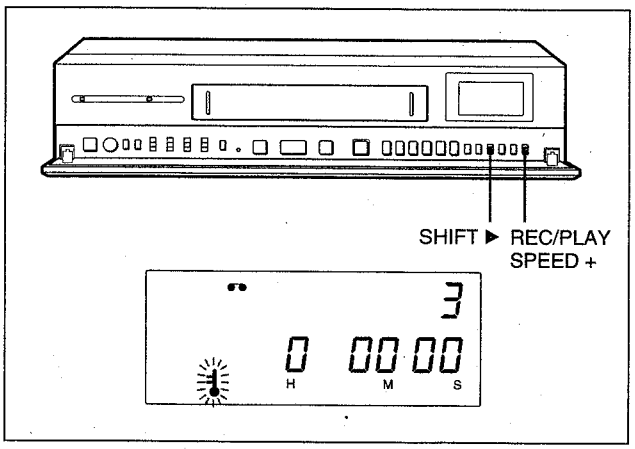
Whenever you insert a tape and first start recording, Adaptive Picture Control (APC) automatically improves recording quality by adjusting the VCR to the condition of the video heads and tape. There is about a 6-second delay before the VCR actually starts recording when ● REC is pressed.

Locking the Record Mode — Security Lock Function

Locking the record mode is useful to guard against accidental recording interruptions when the VCR is used for surveillance or monitoring purposes.

To set the security lock

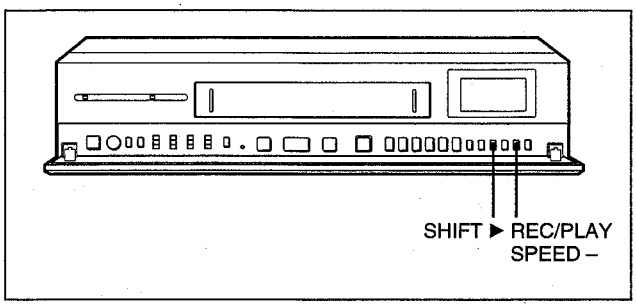
While pressing SHIFT ▶, press REC/PLAY SPEED +. The 🔒 indicator lights in the display window.



The security lock function also works in timer recording and playback modes.
You can use the SHARPNESS control while the security lock function is working.

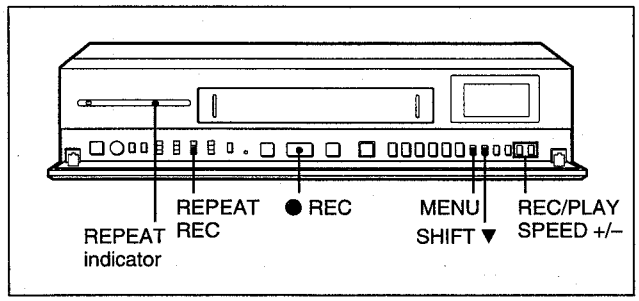
To release the security lock

While pressing SHIFT ▶, press REC/PLAY SPEED –.
The ⚷ indicator turns off.



Recording on the Same Cassette Repeatedly — Repeat Recording

You can record on the same cassette repeatedly in two different modes: MODE 1 and MODE 2.



1 Press MENU until the OTHER display appears on the screen.

```
<OTHER>
REPEAT          MODE1
TAPE END        -3M
RS-232C         1200
```

2 Press SHIFT ▼ to move the flashing to REPEAT and set the mode to MODE 1 or MODE 2 by pressing REC/PLAY SPEED +/–.
MODE 1: If an alarm input is received during repeat recording, the recording mode switches to alarm recording. After the end of the tape is reached, the tape is automatically rewound and stops at the beginning. The OFF indicator lights in the display window.
MODE 2: If an alarm input is received during repeat recording, the recording mode switches to alarm recording. Repeat recording is performed regardless of whether an alarm input is received or not.

3 Set REPEAT REC to ON.
The REPEAT indicator lights.

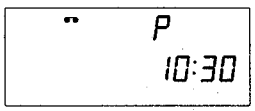
4 Press ● REC.
Recording begins.
When the tape reaches the end, the tape is rewound at the beginning and recording resumes.

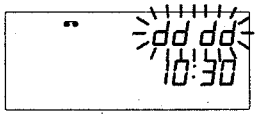
Note

If REPEAT REC is set to OFF while repeat recording is in progress, recording proceeds until the end of the tape is reached and then stops automatically after the tape is rewound at the beginning. The OFF indicator lights in the display window.

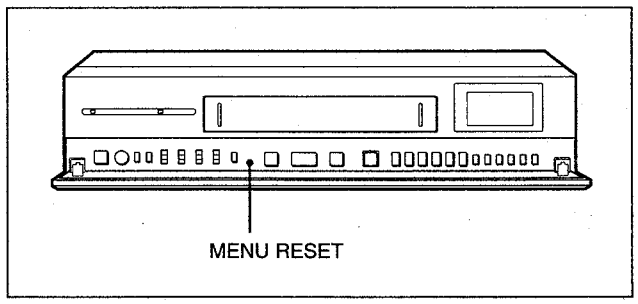
Recording after Power Interruption or Moisture Condensation

If a power interruption occurs, The P indicator lights in the display window and if a moisture condensation occurs, the "dddd" indicator flashes. Even if a power interruption or moisture condensation occurs while recording, the internal batteries provide backup power for memory for at least 30 days. The internal batteries can be charged in about 48 hours.
If the power is interrupted during recording, the recording starts automatically after power is restored.





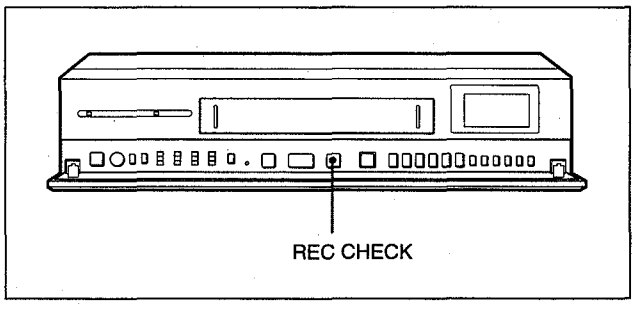
To clear the P indicator



Press MENU RESET.

Monitoring the Recording Condition

You can check the recording condition by pressing REC CHECK while recording in time lapse mode.

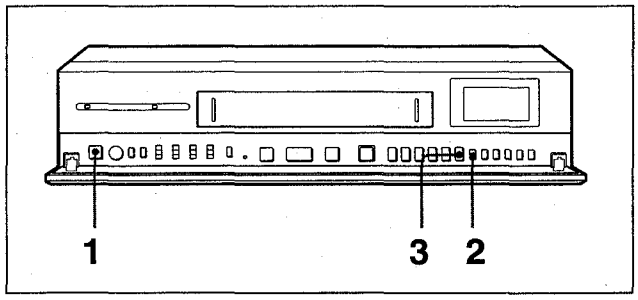


Press REC CHECK while recording.
After the tape is rewound for about three seconds and played back for about two seconds, the unit returns to the original recording mode.

Note

While monitoring the recording condition, recording is interrupted.

Checking the Used Time



1 Turn on the power of the equipment to be used.

2 Press MENU until the USED TIME display appears on the screen.
VIDEO: shows the amount of time the video head has been used.
POWER: shows the amount of time the power has been on.

```
<USED TIME>
VIDEO          00020H
POWER          00040H
<OTHER>
REPEAT         MODE1
TAPE END       -3M
RS-232C        1200
```

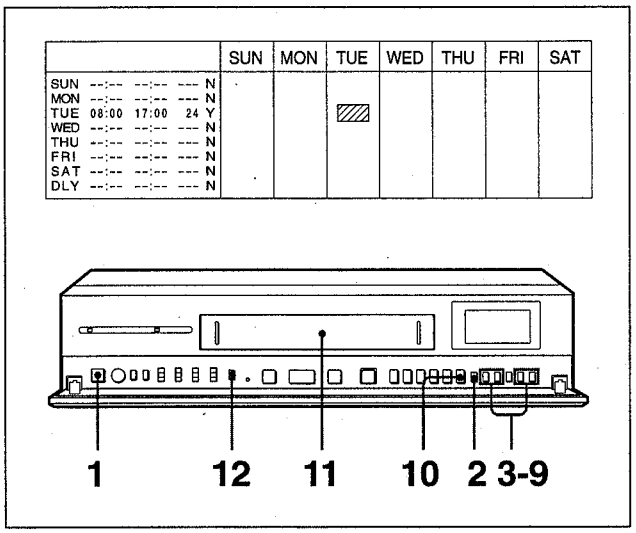
3 Press SEARCH to return to the normal display.

Timer Recording

You can set the timer recording in two methods: day of the week recording and daily recording.
Before starting, make sure that the time and date are set properly. (See page 11.)

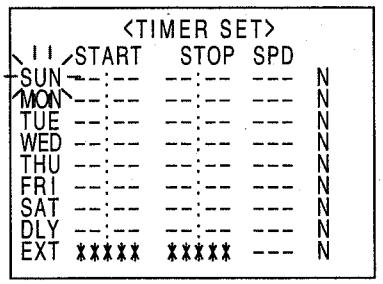
Day of the Week Recording

Example 1:
Making a recording from 8:00 on Tuesday to 17:00 the same day with the recording speed set to 24-hour mode.

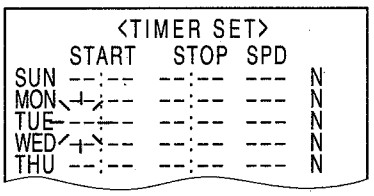


1 Turn on the power of the equipment to be used.

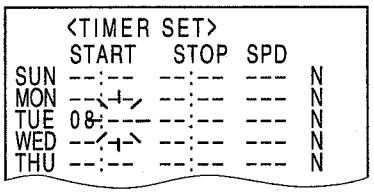
2 Press MENU until the TIMER SET display appears on the screen.



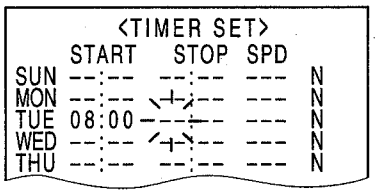
3 Press SHIFT ▼ to move the flashing to TUE and the SHIFT ▶ to move it to the hour position of START.



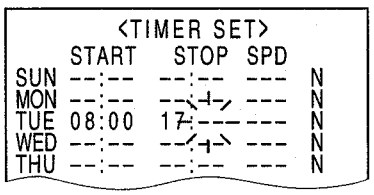
4 Set the start hour by pressing REC/PLAY SPEED +/– and press SHIFT ▶.



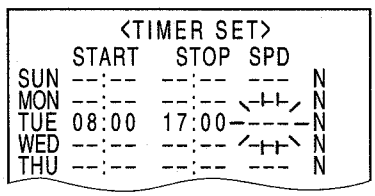
5 Set the start minute by pressing REC/PLAY SPEED +/– and press SHIFT ▶.



6 Set the stop hour by pressing REC/PLAY SPEED +/– and press SHIFT ▶.



7 Set the stop minute by pressing REC/PLAY SPEED +/– and press SHIFT ▶.



8 Set the recording speed by pressing REC/PLAY SPEED +/– and press SHIFT ▶.

<TIMER SET>

	START	STOP	SPD	
SUN	--:--	--:--	---	N
MON	--:--	--:--	---	N
TUE	08:00	17:00	24	N
WED	--:--	--:--	---	N
THU	--:--	--:--	---	N

9 Select Y (yes) to execute the timer recording by pressing REC/PLAY SPEED +/–.

<TIMER SET>

	START	STOP	SPD	
SUN	--:--	--:--	---	N
MON	--:--	--:--	---	N
TUE	08:00	17:00	24	Y
WED	--:--	--:--	---	N
THU	--:--	--:--	---	N

If you want to preset other settings, repeat steps 3 to 9.

10 When you have completed all the settings, press SEARCH to return to the normal display.

11 Insert the cassette.

12 Set TIMER to ON.

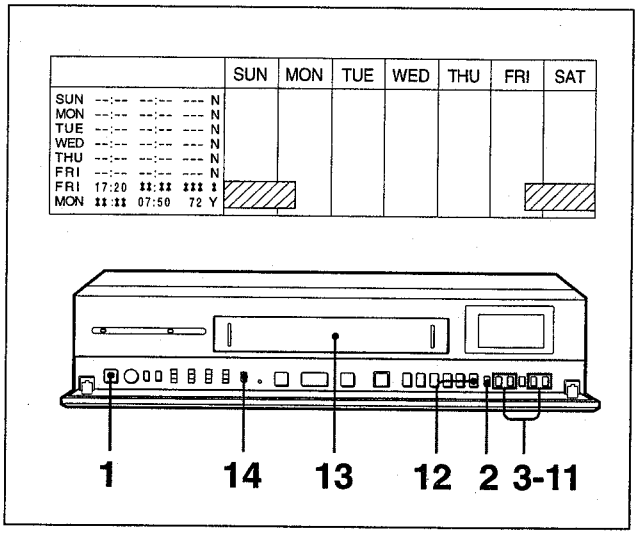
The VCR turns off automatically, and enters the timer recording standby mode. The ⏲ indicator appears in the display window.

When no cassette is inserted. The ⏲ indicator flashes.

You can set the timer to make a recording for more than 2 days using the 7th and 8th lines on the TIMER SET display .

Example 2:

Making a recording from 17:20 on Friday to 7:50 on Monday with the recording speed set to 72-hour mode.



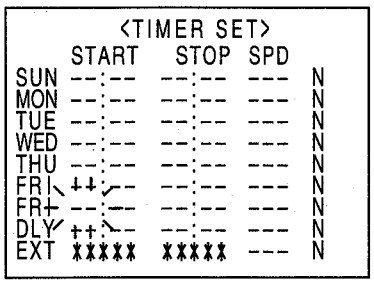
1 Turn on the power of the equipment to be used.

2 Press MENU until the TIMER SET display appears on the screen.

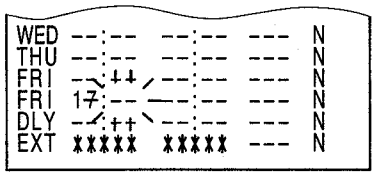
<TIMER SET>

	START	STOP	SPD	
SUN	--:--	--:--	---	N
MON	--:--	--:--	---	N
TUE	--:--	--:--	---	N
WED	--:--	--:--	---	N
THU	--:--	--:--	---	N
FRI	--:--	--:--	---	N
SAT	--:--	--:--	---	N
DLY	--:--	--:--	---	N
EXT	*****	*****	---	N

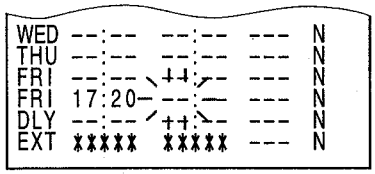
3 Press SHIFT ▼ to move the flashing to SAT (7th line), change SAT to FRI by pressing REC/PLAY SPEED +/– and press SHIFT ▶.



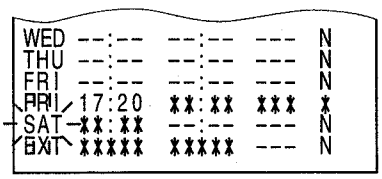
4 Set the start hour by pressing REC/PLAY SPEED +/– and press SHIFT ▶.



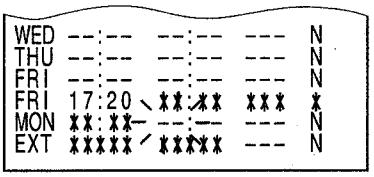
5 Set the start minute by pressing REC/PLAY SPEED +/– and press SHIFT ▶.



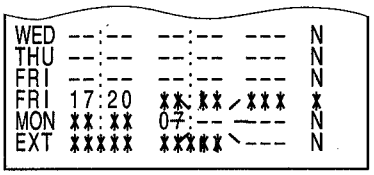
6 Display the * marks on the stop time (STOP), recording speed (SPD) and timer execution positions in the 7th line and on the start time (START) position in the 8th line by pressing REC/PLAY SPEED +/– and press SHIFT ▶.
The day of the week in the 8th line changes to the day after the day in the 7th line.



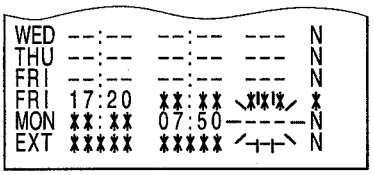
7 Set flashing SAT to MON by pressing REC/PLAY SPEED +/– and press SHIFT ▶ to move the flasing to the hour position of STOP.



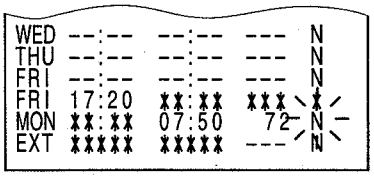
8 Set the stop hour by pressing REC/PLAY SPEED +/– and press SHIFT ▶.



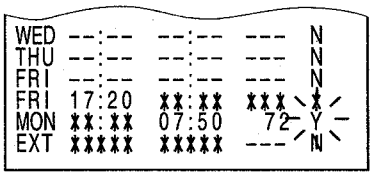
9 Set the stop minute by pressing REC/PLAY SPEED +/– and press SHIFT ▶.



10 Set the recording speed by pressing REC/PLAY SPEED +/– and press SHIFT ▶.



11 Select Y (yes) to execute the timer recording by pressing REC/PLAY SPEED +/–.



12 When you have completed all the settings press SEARCH to return to the normal display.

13 Insert the cassette.

14 Set TIMER to ON.
The VCR turns off automatically, and enters the timer recording standby mode. The ⏲ indicator appears in the display window.
When no cassette is inserted. The ⏲ indicator flashes.

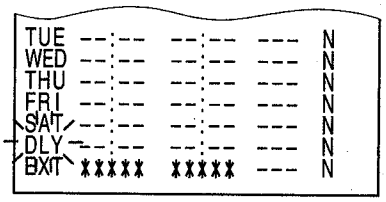
When the ⏲ indicator appears in the display window, the buttons except TIMER does not work.

Daily Recording

You can preset the timer to start recording each day of the week.

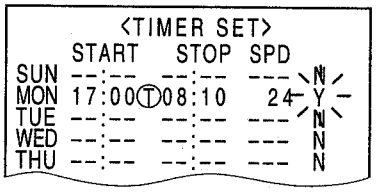
1 Move the flashing to the appropriate day of the week by pressing SHIFT ▼.

2 Set the day to DLY by pressing REC/PLAY SPEED +/– before setting the hour position of START in step 3.



When the time set in the STOP section is earlier than the time set in the START section

The STOP time is assumed to be for the next day, and the T (tomorrow) indicator is displayed before the stop time.



Timer recording is interrupted when the power is interrupted

When a period of the power interruption is shorter than the power backup time (within 30 days) and within the timer end time, the recording is resumed after the power is restored.
The P indicator lights in the display window to show that the timer recording is interrupted. (To clear the P indicator, press MENU RESET on the front panel. See page 16.)

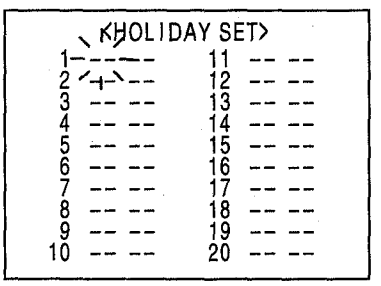
To stop the timer recording

Set TIMER to OFF. The recording stops and the power is turned off.

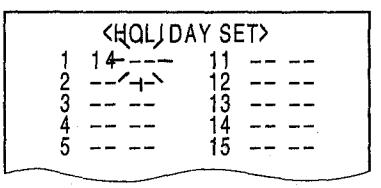
Setting the Holiday

If you enter dates for holidays, the VCR will assume that these dates are Sundays and will record at the same time you set for Sundays.

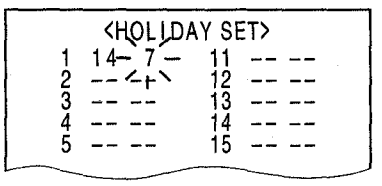
1 Press MENU until the HOLIDAY SET display appears on the screen.



2 Set the day of the holiday you want by pressing REC/PLAY SPEED+/– and press SHIFT ▶.



3 Set the month of the holiday by pressing REC/PLAY SPEED+/–.



To set other holidays, press SHIFT ▼ ▶ to move to the next row.

4 When you have completed all the settings, press SEARCH to return to the normal display.

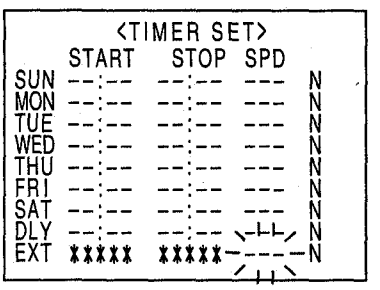
Recording Using an External Timer

You can preset the time to start and end recording by using a timer connected to the EXT TIMER terminal on the rear of the unit. Set the recording speed on the TIMER SET display on screen.

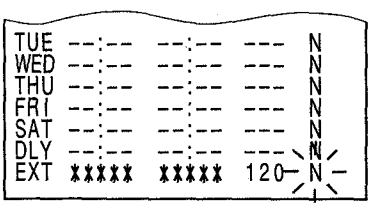
1 Turn on the power of the equipment to be used.

2 Press MENU until the TIMER SET display appears on the screen.

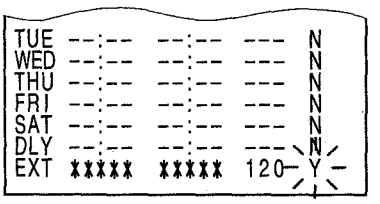
3 Press SHIFT ▼ to move the flashing to EXT (lowest line) and press SHIFT ▶.



4 Set the recording speed by pressing REC/PLAY SPEED +/– and press SHIFT ▶.



5 Select Y (yes) to execute the timer recording by pressing REC/PLAY SPEED +/–.

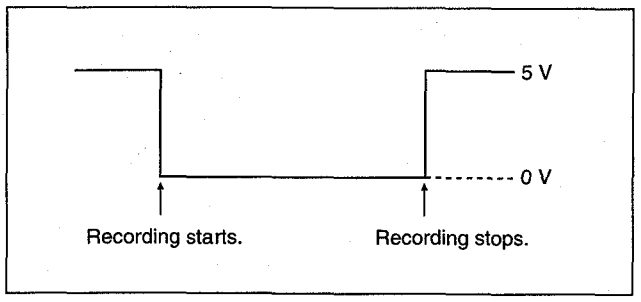


6 When you have completed all the settings, press SEARCH to return to the normal display.

7 Insert the cassette.

8 Set TIMER to ON.

Input signal from the EXT TIMER terminal



Changing/Cancelling the Timer Settings

When ⏲ indicator lights in the display window, set TIMER to OFF to clear it.

Changing the timer settings

1 Press MENU until the TIMER SET display appears on the screen.

2 Press SHIFT ▶ or ▼ to move the flashing to the position where you want to change.

3 Press REC/PLAY SPEED +/– to change the setting.

4 Press SEARCH to return to the normal display.

Cancelling the timer setting

1 Press MENU until the TIMER SET display appears on the screen.

2 Press SHIFT ▼ to move the flashing to the position where you want to cancel.

3 Press SHIFT ▶ to move the flashing to the timer execution.

4 Press REC/PLAY SPEED +/– to set the timer execution to N.

5 Press SEARCH to return to the normal display.

Cancelling all timer settings

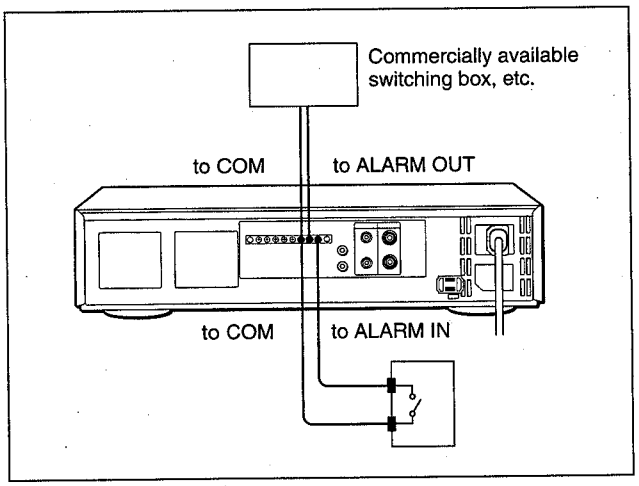
1 Press MENU until the TIMER SET display appears on the screen.

2 Press MENU RESET.

Alarm Recording

You can use a door switch or alarm sensor to trigger alarm recording. You can make alarm recording in recording mode, stop mode, power off mode and one-shot recording mode with the selected recording speed.

Connecting an Alarm Sensor



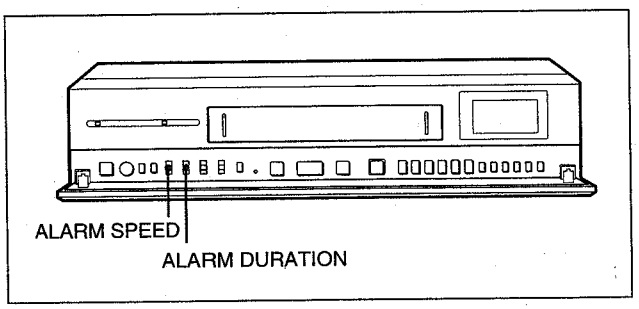
Setting the Alarm Speed and Duration

You can set ALARM SPEED as follows:

3H: for recording in 3-hour mode
12H: for recording in 12-hour mode
NC: for recording at the same speed as before the alarm was

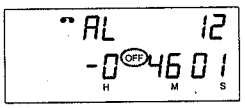
You can set ALARM DURATION as ofllows:

20S: for recording for 20 seconds
1M: for recording for one minute
CC: for recording as long as the alarm signal is being input (or for at least five seconds)



Notes

- While alarm recording is in progress, other modes are inoperable.
- After the alarm recording is completed, the VCR returns to the condition it was in before the alarm signal was received.
- If an alarm input is received while the VCR is in repeat recording (see page 16), repeat recording stops and the REPEAT indicator goes off. After the tape reaches the end, the tape is rewound and the VCR stops. The OFF indicator lights in the display window.

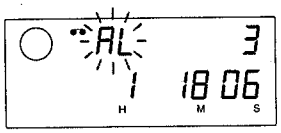


When the OFF indicator lights, in order to prevent accidental erasure of a recorded tape, timer recording and alarm recording cannot be executed.
If any of ● REC, ▶▶ FF, ◀◀ REW, ▶ PLAY is pressed, the OFF indicator goes off.

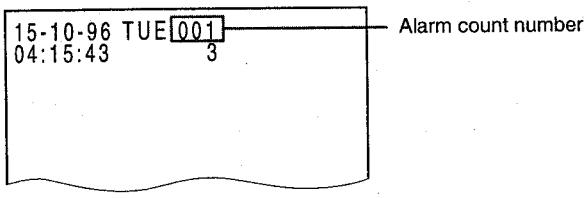
- If another alarm is received while alarm recording is in progress, the second alarm recording starts and the recording duration is extended.
- If the power is interrupted while alarm recording is in progress and restored again, the operation before the alarm recording was made resumes.

Indicators during alarm recording

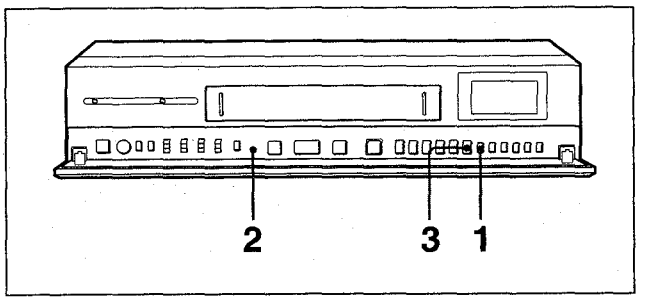
The AL indicator flashes in the display window.



The count (left digit) of the alarm recording flashes on the monitor screen.
The alarm recording can be counted up to 999.
When the alarm function has worked 1000 times, the count number returns to 000.



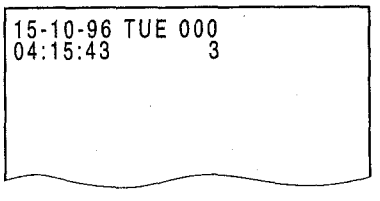
To Reset the Alarm Count



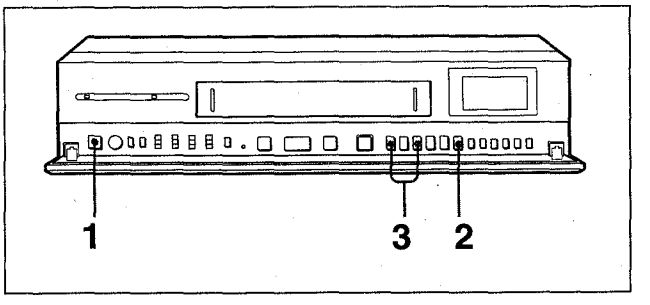
1 Press MENU until the ALARM TIME display appears.

2 Press MENU RESET.

3 Press SEARCH to return to the normal display. The count on the screen are reset to 000.

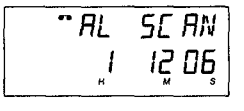


Scanning the Picture of the Alarm Recordings — Alarm Scan

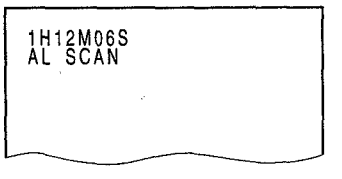


1 Turn on the power of the equipment to be used.

2 Press SEARCH in stop mode.
The AL SCAN lights in the display window and on the monitor screen.



In the display window



On the monitor screen

3 Press ▶▶ FF or ◀◀ REW.
The portions where the alarm function worked are subsequently played back for five seconds one by one.

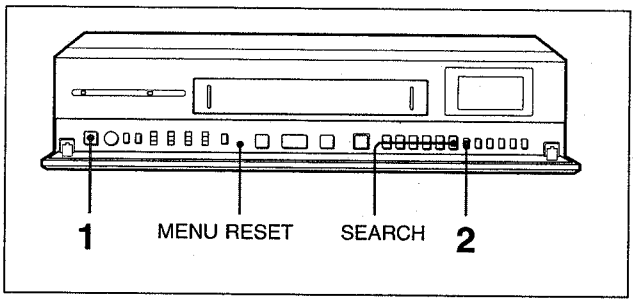
Press ❚❚ PAUSE to view a certain scene in still mode. (Alarm scan mode is released.)

Press ■ STOP, ▶ PLAY, ▶▶ FF, or ◀◀ REW to release alarm scan mode.

Note

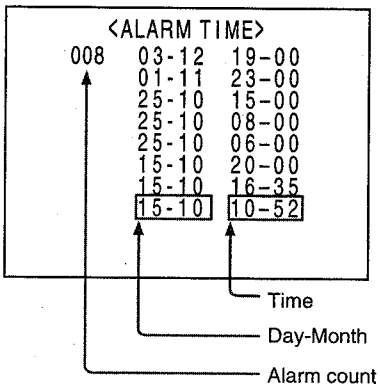
If the tape reaches the end during scanning, the tape is rewound and the unit enters the stop mode at the beginning of the tape.

Displaying the Alarm List — Alarm Recall



1 Turn on the power of the equipment to be used.

2 Press MENU until the ALARM TIME display appears on the screen.
The alarm count, date and time are displayed.
The date and time are displayed up to recent eight times.



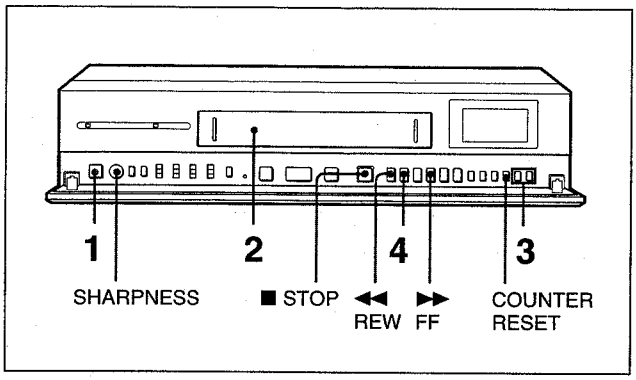
To turn off the alarm list on the screen

Press SEARCH. The normal display appears.

To reset the alarm data

Press MENU RESET while the ALARM TIME display is on the screen.
The alarm count shows "000".

Playback



1 Turn on the power of the equipment to be used.

2 Insert the cassette.

3 Select the playback speed by pressing REC/PLAY SPEED –/+.
The selected playback speed is displayed in the display window.

4 Press ▶ PLAY.
Playback starts.

To stop playback
Press ■ STOP.

To rewind the tape
Press ■ STOP and then ◀◀ REW.

To fast-forward the tape
Press ■ STOP and then ▶▶ FF.

To adjust the sharpness of the picture
Turn SHARPNESS to SHARP for a sharper picture or to SOFT for a softer picture.

Resetting the tape counter
The tape counter in the display window helps you to locate a certain scene after playback. Press COUNTER RESET to set the counter to "0H00M00S" (counter zero) position before playing back the tape. The VCR keeps counting the length of the tape being played back. Note, however, that the tape counter will not count the portions without video signals.

Note

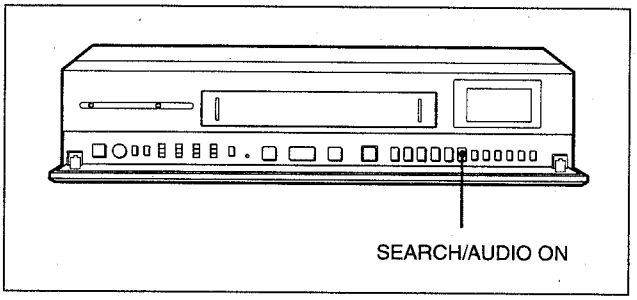
You cannot play back the tapes recorded on other time-lapse VCR on this VCR and vice versa.

Audio Playback

You can play back the sound with the picture if a tape is recorded in 3-, 12-, or 24-hour mode.
Play back the tape at the same speed at which it was recorded so that you can monitor the sound normally.

For audio playback in 3-hour mode
Play back the tape normally.

For audio playback in 12-hour or 24-hour mode
Press SEARCH/AUDIO ON in playback mode.
"A12" or "A24" is displayed in the display window.
To turn off the sound, press SEARCH/AUDIO ON again.



Note

Noise appears on the screen and the sound is distorted when you play back the picture in 12- or 24-hour mode.

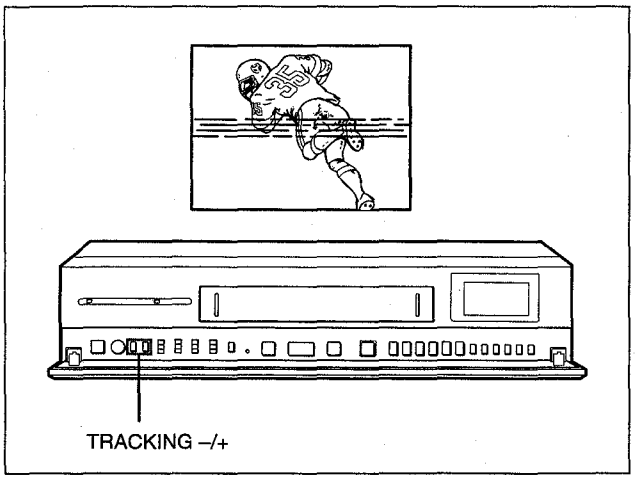
Playback speed
You can view the playback picture at one of the following speeds.

Recording speed(H)	Playback speed (H)				
	3	12	24	48	72
3	1	1/4	1/8	1/16	1/24
12	4	1	1/2	1/4	1/6
24	8	2	1	1/2	1/3
48	16	4	2	1	2/3
72	24	6	3	3/2	1

For example, when a tape recorded in 24-hour mode is played back in 3-hour mode, you can view the playback picture at a speed 8 times faster than the recorded one.

Adjusting Pictures

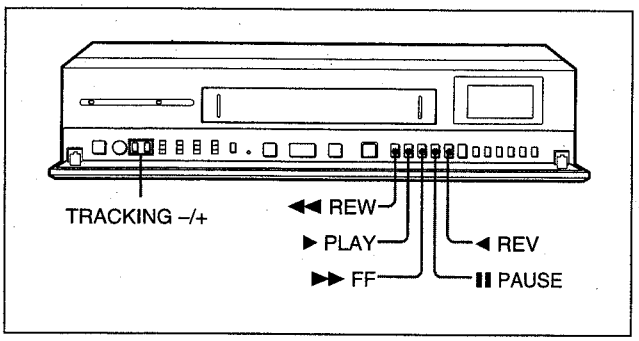
If streaks or noise bands appear on the playback picture, adjust the tracking condition.



Use TRACKING –/+.

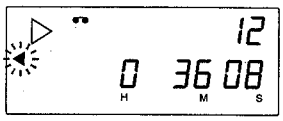
Various Playback Modes

You can play back picture at various modes: reverse playback, still and field by field pictures, and high-speed playback in both forward and reverse directions.



Reverse Playback

During playback, keep pressing ◀ REV. Reverse playback picture appears on the screen.



In the display window

Note

During reverse playback, streaks appear on the monitor screen.

Still Picture

During playback, press ❚❚ PAUSE.
To resume normal playback, press ❚❚ PAUSE or ▶ PLAY.
When the still mode lasts for more than about five minutes, the VCR will automatically enter the playback mode.

If the picture shakes while in the still mode

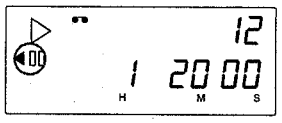
Adjust the picture with TRACKING –/+.

Field-by-Field Picture

In the still mode, press ▶▶ FF or ◀◀ REW.
Each time you press the button, the picture advances by one field.
When you hold the button down, the picture advances continuously.

When ▶▶ FF is pressed

When ◀◀ REW is pressed



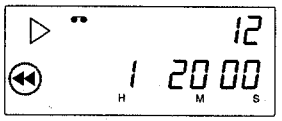
In the display window

Picture Search

During playback, press ▶▶ FF (forward direction) or ◀◀ REW (reverse direction). A high-speed picture (about five times the normal speed in 3-hour mode) without sound appears on the monitor screen.
To resume normal playback, press ▶ PLAY.

When ▶▶ FF is pressed

When ◀◀ REW is pressed



In the display window

Note

During picture search, streaks or noise band appear on the monitor screen.

Maintenance

We recommend you check the VCR daily to confirm that the VCR works correctly.
When the security lock is in effect, release it before operating.

Perform the following checks before starting to record.

1 Turn on the camera, monitor, and this VCR.

2 Confirm that the picture from the camera appears on the monitor screen.

3 Confirm that the time and date display on the monitor is correct.

4 To check the recording condition of the previous day, rewind the tape for a few seconds and play back the tape.

5 Confirm that playback is normal.

6 Confirm that recorded time and date information is correct.

If you find any malfunction, switch all equipment off, unplug the VCR from the AC outlet, and consult your Sony dealer.

Cleaning Video Heads

After prolonged use, the video heads may become contaminated, which results in impaired picture quality (snow) or loss of picture. To avoid this, clean the video heads regularly.

Replacing Video Heads

If optimum picture quality is not restored even after you have cleaned the video heads, head replacement may be necessary. Please consult your Sony dealer.

Checking the Video Heads Every 1000 Hours

A VCR is a high-precision piece of equipment because it records or plays back the picture on a magnetic tape. In particular, the video head and other mechanical parts become dirty or worn. To maintain a clean picture, we recommend maintenance every 1000 hours.
To identify the service time, display the USED TIME screen. (See page 18.)

Maintaining Mechanical Parts

When not used for long periods, the VCR should be switched on now and then set to the playback mode for about three minutes. This helps to prevent mechanical deterioration.

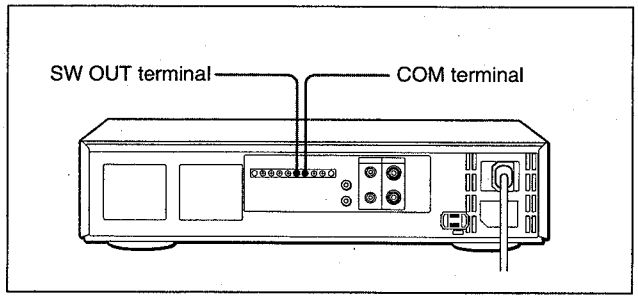
Servicing Periodically

To maintain optimum operating conditions and picture quality, periodic servicing (cleaning, lubrication, parts replacement) is necessary.
Please consult your Sony dealer.
If the VCR is to be used for critical monitoring purposes, it may be preferable to perform servicing at shorter intervals.

Terminals

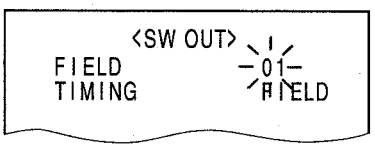
SW OUT Terminal

The VCR outputs a pulse signal from the SW (switch) OUT terminal to the camera switcher to control the switching from camera to camera.

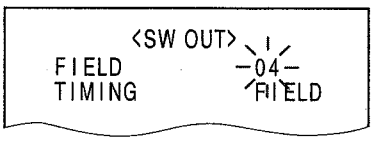


Specify the interval between each pulse signal on the SW OUT display. Also, set TIMING to FIELD or FRAME depending on the specifications of the camera switcher.
Available settings are:
- **FIELD:** 1, 2, 3, 4, 5, 10, 30, or 50 fields
- **FRAME:** 1, 2, 3, 4, 5, 10, 30, or 50 frames

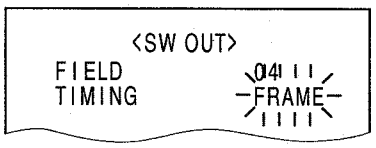
1 Press MENU until the SW OUT display appears on the screen.



2 Set the interval by pressing REC/PLAY SPEED +/– and press SHIFT ▶.



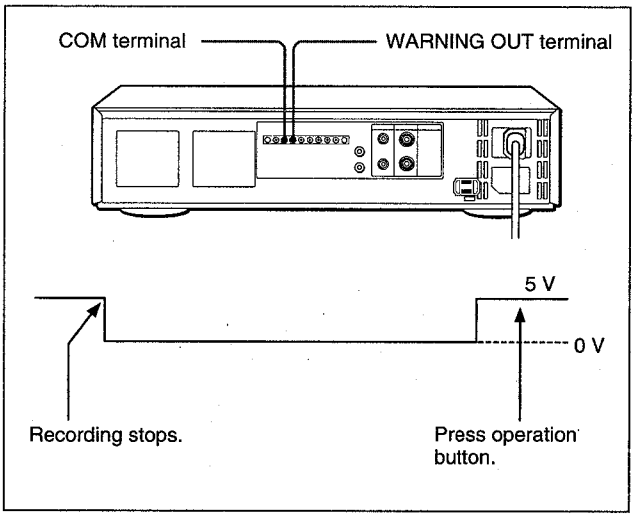
3 Set TIMING to FIELD or FRAME by pressing REC/PLAY SPEED +/–.



4 When you have completed the settings, press SEARCH to retlurn to the normal display.

WARNING OUT Terminal

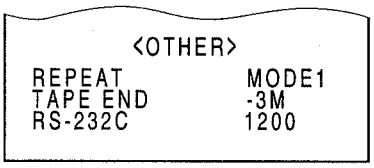
This terminal will help you to know when something wrong has happened to the VCR during recording. The VCR outputs a signal from WARNING OUT terminal.



RS-232C Interface

When a personal computer is connected via RS-232C interface (SVT-RS1 Computer Interface Board), set the baud rate on the OTHER screen.

1 Press MENU until the OTHER display appears on the screen.

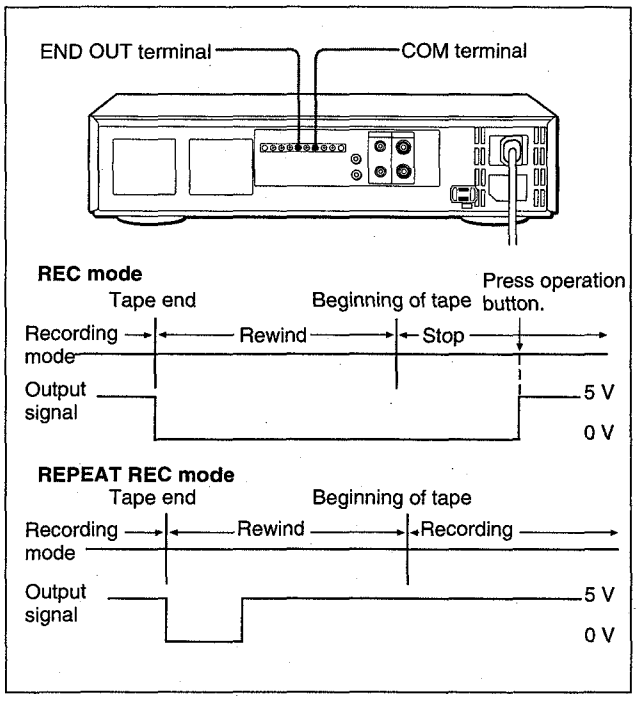


2 Press ▼ SHIFT to move the flashing to RS-232C and set the baud rate (1200, 2400, 4800 or 9600 bps) by pressing REC/PLAY SPEED+/–.

3 Press SEARCH to return to the normal display.

END OUT Terminal

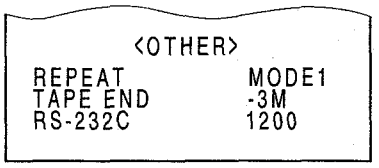
When the VCR detects the tape end or the time counter shows "2H57M" during recording, the output level becomes 0 V DC. To resume the 5 V output, press the operation button (● REC, ▶▶ FF, ◀◀ REW or ▶ PLAY).



Select either the tape end or "2H57M" on the OTHER display.

- **–3M:** the time counter shows "2H57" (about three minutes before the tape end, when using E-180 tape) and a signal is output from the END OUT terminal (recording will be continued to the end of the tape).
- **END:** the VCR detects the tape end.

1 Press MENU until the OTHER display appears on the screen.

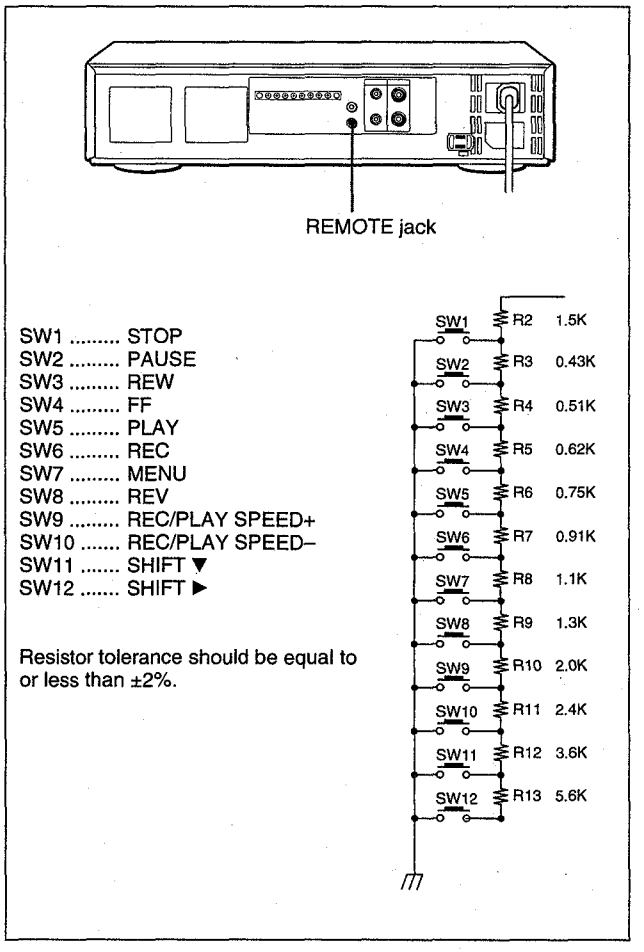


2 Press ▼ SHIFT to move the flashing to TAPE END and set to –3M or END by pressing REC/PLAY SPEED +/–.

3 Press SEARCH to return to the normal display.

REMOTE Jack

The VCR can be remotely controlled by adding the circuit shown below to the REMOTE jack.



Note

Use a shielded cord less than 5 m (16 ft.) in length.

Troubleshooting

This section may help you isolate the problem. Should the problem persist, unplug the unit and contact your Sony dealer or local authorized Sony service facility.

Symptom	Possible cause	Corrective action
The picture does not appear on the monitor screen.	Wrong connection.	Check the connection. (See page 8.)
	No power is provided to video camera and/or monitor TV.	Turn on the power.
The VCR does not respond when you press any button.	No cassette.	Insert a cassette.
	Moisture condensation has occurred.	Leave the VCR until its temperature reaches the room temperature. (See page 16.)
	The VCR is in the alarm recording.	Wait for the alarm recording to finish.
	The security lock function is working.	Release the security lock. (See page 15.)
	The VCR is in timer-recording standby mode or during timer recording.	Set TIMER to OFF.
Recording cannot be done. (The tape ejects automatically.)	The safety tab on the cassette has been removed.	Cover the tab hole with plastic tape. (See page 14.)
Repeat recording cannot be done.	Alarm recording was made during repeat recording.	This is normal.
	REPEAT REC is set to OFF.	Set REPEAT REC to ON. (See page 16.)
Timer recording was not made.	Clock setting is not correct.	Set the clock correctly. (See page 11.)
	TIMER is not set to ON.	Set TIMER to ON. (See page 20.)
Playback picture flickers or blurs.	Video heads are dirty.	Clean the video heads.
Time and date were not recorded.	The time/date display is not displayed.	Set the time/date display. (See page 12.) Set ON-SCREEN to ON. (See page 12.)
The tape does not eject.	System trouble.	Turn the power off and on again to reset the system.
The VCR does not function except to play back the tape.	The power of the equipment to be used is not turned on.	Turn on the power.
The ERROR display appears on the screen.	There is a problem with your unit.	Please contact your Sony dealer.

Specifications

General

Recording method Dual-head rotating helical scanning system
Audio recording In 3-, 12-, and 24-hour modes
Tape speed 23.39 mm/sec (3-hour mode)
Specified video cassette tape
VHS 1/2 in. video cassette tape
Recording/playback time
3, 12, 24, 48 and 72 (when using E-180 tape)
Fast-forward/rewind time
Approx. 4 minutes (when using E-180 tape)
Color system PAL color TV system

Video

Recording method Luminance signal: FM method
Color signal: Low-pass band-pass
Transformation direct recording method
Input BNC: 1 Vp-p, BNC, 75 ohms unbalanced
Output BNC: 1 Vp-p, BNC, 75 ohms unbalanced
Horizontal resolution
Black & white mode: 320 lines or more
Color mode: 240 lines or more

Audio

Input 315 mV (–7.8 dBs), phono jack
47 kilohms unbalanced
Output 315 mV (–7.8 dBs), phono jack
600 ohms unbalanced
Microphone input –60 dBs,
3.5 mm minijack,
600 ohms impedance

Connector

Alarm input Low level
Alarm output +5 V, 5.7 kilohms (Low active)
Switch output +5 V, 5.7 kilohms (Low active)
Tape end output +5 V, 5.7 kilohms (Low active)
Warning output +5 V, 5.7 kilohms (Low active)
External timer input
Low level
Remote control input
3.5 mm minijack

Other specifications

Operating temperature range
5°C to 40°C
Operating humidity range
80% or less
Power supply 220 – 240 V AC, 50 Hz
Power consumption
18 W
External dimensions
Approx. 420 × 100 × 340 mm (w/h/d)
(16 5/8 × 4 × 13 1/2 in.)
Mass Approx. 5.8 kg (12 lb 9 oz)

Supplied accessory

AC power cord (1)

Optional accessory

SVT-RS1 Computer Interface Board

Design and specifications are subject to change without notice.